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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,284	02/03/2005	Kurt Schwirten	12810.00017-US	6484
23416	7590	07/05/2006	EXAMINER PUTTLITZ, KARL J	
CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			ART UNIT 1621	PAPER NUMBER

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/523,284	Applicant(s) SCHWIRTEN ET AL.	
	Examiner Karl J. Puttlitz	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/3/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites that the gravitational phase separation comprises treating the crude ester, either prior to or during the phase separation with the di or poly-valent salt. It is unclear how the phase separation can comprise a step, when the step can occur prior to the phase separation.

In claim 13, the term "is with" is unclear with regard to the relationship between the recited dicarboxylic acid and C1-C11 alcohol.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8-10 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,241,216 to Bergman et al. (Bergman) in view of U.S. Patent No. 5,750,739 to Isozaki et al. (Isozaki).

The rejected claims cover a process for removal of the esterification catalyst by separation from a crude plasticizer ester obtained by reacting a dicarboxylic acid with C8-C13 alcohols, by treating the crude ester with an aqueous alkali solution in the range from 10 to 100 °C. and then separating the aqueous alkaline phase comprising the hydrolyzed esterification catalyst by gravitational phase separation, which comprises treating the crude ester, prior to or during the phase separation, with a salt of a di- or polyvalent metal, or with a mixture of these salts.

The rejected claims also cover those embodiments wherein the esterification catalyst used comprises a Lewis-acid compound of an element of the 4th main group or of the 4th transition group of the Periodic Table of the Elements, specifically, wherein the esterification catalyst used comprises a compound of titanium.

The rejected claims also cover those embodiments wherein, prior to the gravitational phase separation, the crude ester has a content of from 0.1 to 5% by weight of monosalt of dicarboxylic half-ester.

The rejected claims also cover those embodiments wherein the salt used of a di- or polyvalent metal comprises a calcium salt or aluminum salt.

The rejected claims also cover those embodiments wherein said dicarboxylic acid is with C8-C11 alcohols.

The rejected claims also cover those embodiments wherein the esterification catalyst used comprises titanium alkoxylates, specifically the esterification catalyst is $\text{Ti}(\text{O-ethyl})_4$, $\text{Ti}(\text{O-isopropyl})_4$ or $\text{Ti}(\text{O-isobutyl})_4$.

With regard to the above embodiments, Bergman teaches the production of esters of suitable aliphatic and other aromatic dicarboxylic acids or anhydrides thereof, for example, maleic anhydride and fumaric acid.

Bergman teaches that an esterification reaction mixture is mixed with an aqueous alkali to solubilize the monester by-product therein and the mixture is allowed to separate into two phases, the first aqueous phase and the first organic phase. Said first aqueous phase is the process waste water which is subsequently treated. See description bridging columns 10 and 11 (Example 1). Given the nature of the reaction, those amounts of crude esters required by claim 4 would have been expected.

Bergman fails to explicitly teach the required step of treating the crude ester with a salt of a di- or polyvalent metal, or with a mixture of these salts. However, it is for this proposition that the examiner joins Isozaki. Specifically, this patent teaches a process for producing a glycidyl esters comprising cooling the liquid reaction product while recovering part of excess epichlorohydrin under reduced pressure; adding aqueous solution of an alkali hydroxide to the liquid reaction product to separate into aqueous layer and organic layer; adding a catalyst deactivator, see abstract. Importantly, There is used, as the catalyst deactivator, at least one member selected from sodium salts and calcium salts, see column 6, lines 4 and 5.

Those of ordinary skill would have been motivated to modify the disclosure of Berman to include a step of adding calcium salts since Isozaki teaches that this step effectively deactivates that catalyst during the separation cycle. Accordingly, the rejected claims are prima facie obvious in view of Bergman and Isozaki since this combination of references teaches or suggests the elements of the rejected claims with a reasonable expectation of success.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl J. Puttlitz whose telephone number is (571) 272-0645. The examiner can normally be reached on Monday to Friday from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page, can be reached at telephone number (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karl J. Puttlitz
Assistant Examiner